DOCUMENT RESUME

ED 364 769 CE 065 394

AUTHOR	Aggor, R. A.; And Others
TITLE	Survey on Distance Education in Ghana. A Report for the Deputy Secretary (Higher Education Division), Ministry of Education of the Republic of Ghana.
INSTITUTION	Commonwealth of Learning, Vancouver (British Columbia).
SPONS AGENCY	Ministry of Education (Ghana).
REPORT NO	ISBN-1-895369-18-5
PUB DATE	Jun 92
NOTE	76p.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*Access to Education; Adult Education; *Developing Nations; *Distance Education; *Educational Improvement; Educational Needs; External Degree Programs; Foreign Countries; *Government Role; Higher Education; Outreach Programs; *Program Development; Womens Education
IDENTIFIERS	*Ghana

ABSTRACT

Interviews conducted with 65 government officials, nongovernmental officials, education, administrators, politicians, students, teachers, heads of institutions, and others in Ghana during a 6-month period led to recommendations for improving the adult and higher education system in that country. The survey found that demand for higher education in Ghana has increased in recent years as a result of population growth and the increase in the number of secondary school completers. Additionally, there is greater demand to provide more access for women to the educational system. High costs associated with the country's traditional residency-based higher education system have put higher education out of reach of many. However, a distance learning system is in place and could be expanded to help meet the growing demands for increased education. The distance education system has usually served more women than the traditional higher education system, so it can also serve a positive function in increasing the diversity of the student body throughout higher education in the country. The government should take steps to greatly increase the distance education system. A distance education unit should be established and an integrated systems plan should be developed in order to provide continuous access from secondary education and training to the tertiary system. Greater funding for distance education must also be provided. The distance education program could be improved by creating a system of regional centers for distribution of course materials and employment of local tutors to mark papers and interact with students. No distinction should be made between courses taken via distance education and those taken on campus. Personnel must be hired for instruction, administration, and production of materials; both professional and support staff are needed. Government and the universities must make distance education a priority to serve a population who would otherwise not have access to education. (Appendixes to the report include a list of survey participants, the survey questionnaires, and a selected bibliography listing 22 references.) (KC)

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SURVEY ON DISTANCE EDUCATION IN GHANA

A Report for the Deputy Secretary
(Higher Education Division)
Ministry of Education
of the Republic of Ghana

The Commonwealth *of* Learning

Republic *of* Ghana

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Survey on Distance Education in Ghana

A Report for the Deputy Secretary
(Higher Education Division)
Ministry of Education
of the Republic of Ghana

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June 1992

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Survey on Distance Education in Ghana:
A Report for the Deputy Secretary (Higher Education Division)
Ministry of Education of the Republic of Ghana

ISBN 1-895369-18-5

Published by:

The Commonwealth of Learning
#1700 - 777 Dunsmuir Street
Vancouver, British Columbia
Canada V7Y 1K4

Telephone: 604 660 4675
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Fax: 604 660 7472

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ACKNOWLEDGEMENTS

When a survey team has completed its report, it would seem a simple task to thank those who have helped them in its preparation. In actuality, the task is not easy at all. This report is a product of the concerted efforts and contributions of many persons, institutions and organisations whose collaboration, both individually and collectively, has contributed to this project. In particular, the team would like to thank all those who gave so readily of their time and effort to participate in the survey exercise: Janet Tsiboe, Reuben Agbemeseli, Emelia Quaye, Emefa Adanu, Nathaniel Anibra, Edmund Adjei and D. Y. Owusu. The team is also grateful to those who participated in interviews and to those who took time from their busy schedules for discussions.

For the members of the team to reach all the people with whom they wished to meet, they had to travel some long distances. For having managed to reach the nearest as well the farthest point, the team gives its greatest thanks to the Director and staff of the Institute of Adult Education and the regional staff of the National Mobilisation Programme.

The team is also indebted to senior officials, such as the PNDC Deputy Secretary for Education (Higher Education Division) and others who were generous with their time, advice and consistent guidance.

Finally, on behalf of the Ghana Ministry of Education, the team would like to thank The Commonwealth of Learning, without whose support this evaluation would not have been possible.

R. A. Aggor

P. E. Kinyanjui

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J. Colin Yerbury

June 1992

THE COMMONWEALTH OF LEARNING

The Commonwealth of Learning was established on 1 September 1988 by a Memorandum of Understanding agreed by Commonwealth Governments. It was established as an international organisation with member countries of the Commonwealth, through their Governments, as participants. The Memorandum of Understanding describes the purpose of the Agency as follows:

The purpose of the Agency is to create and widen access to opportunities for learning, by promoting co-operation between universities, colleges and other educational institutions throughout the Commonwealth, making use of the potential offered by distance education and by the application of communication technologies to education. The Agency's activities will aim to strengthen member countries' capacities to develop the human resources required for their economic and social development, and will give priority to those developmental needs to which Commonwealth co-operation can be applied. The Agency will work in a flexible manner and be capable of responding effectively to changing needs. It will serve the interests of Commonwealth member countries and of the Commonwealth itself, working in co-operation with Governments and other Commonwealth agencies and educational institutions and doing so in a way that is consistent with the principles that have guided the Commonwealth. In performing its functions the Agency will seek to ensure the appropriateness of programmes and of distance education techniques and technologies to the particular requirements of member countries.

FOREWORD

In March 1991, the Ministry of Education (Higher Education Division) made a request to The Commonwealth of Learning to conduct a survey of distance education needs in Ghana. The request was accepted and a team of four people was put together to carry out the assignment.

The survey started with a self-study review process done at a distance between Vancouver and Accra, followed by the actual field work in Ghana from 1-19 May 1992. This survey report is the product of an intensive co-operative exercise by Ghana university and Ministry personnel and the survey team co-ordinated by the COL staff.

The Commonwealth of Learning records its appreciation to all who have contributed to the survey project and the publication of this report. As part of its mandate, COL will continue to support appropriate research and evaluation for the development and improvement of educational systems throughout the Commonwealth.

Professor James A. Maraj

President

The Commonwealth of Learning

BACKGROUND

The years between 1986 and 1993 will serve as a significant milestone in the development of tertiary education in Ghana with the establishment of the Education Sector Reform Programme in 1987. Following more than three decades of tertiary education, Ghana had earned a reputation for providing good quality graduates. Reviews of the impact of the universities on society and the national development process over the same period suggested a reappraisal of course content and orientation as well as a revision of the very models of institutional organisation; this was necessary in order to avoid growing disjuncture between university education and the national development process. After the reappraisal of the problems facing tertiary education and its future evolution within the context of national development, the Government of Ghana initiated the tertiary component of the education reform programme and identified the objectives that are to be achieved by 1993.

The 1991 Ministry of Education brief to the Provisional National Defence Council (PNDC) suggested that there was a need to develop a policy to increase student accessibility to tertiary education. Preference to all students from outside cities or towns in which tertiary institutions are not located would be a priority. It was proposed that access could be achieved by building up the *distance education* capacity of Ghana. The Government was also convinced that distance education could be effectively used to fill the present gaps in the provision of both formal and nonformal education and training at all levels in the country.

In March 1991, the Ghana Ministry of Education requested assistance from The Commonwealth of Learning to conduct a survey of distance education needs in the country. When the proposal was accepted, both parties agreed that the survey would be undertaken by a team of four—two professional educators from the university system in Ghana, an evaluator selected by The Commonwealth of Learning (COL) and an official from COL. The two educators chosen were R. A. Aggor, Resident Tutor, Institute of Adult Education, University of Ghana, and Dr. N.K. Pecku, Senior Lecturer, Department of Educational Foundations, University of Cape Coast. The third member was Dr. J. Colin Yerbury, Director, Centre for Distance Education, Office of Continuing Studies, Simon Fraser University, Burnaby, Canada. Professor P. E. Kinyanjui, Senior Programme Officer, African Division, The Commonwealth of Learning, was the fourth team member. The following terms of reference were used by the team:

- to identify existing distance education programmes in Ghana;
- to evaluate the educational value of distance education programmes;

- to determine what type of education each programme provides, i.e., classify them;
- to identify various learning needs that exist in Ghana and that can be satisfied through distance education;
- to suggest the most relevant programmes in terms of national aspirations and needs;
- to identify the most appropriate technology and techniques to initiate and sustain the required programmes;
- to prepare a phased and costed programme and identify possible sources of funding; and
- to make suggestions and recommendations for action.

To expedite the survey process, Dr. J. Colin Yerbury initiated a self-study review of distance education needs and existing programmes. The self-study process involved as many people as possible from all levels and components of government and the community by the two Ghanaian members of the team, and they examined such aspects as history, current status, pending changes, future prospects, strengths and limitations. Since this was an opportunity for the Ghanaian team members "to know thyself" before the external evaluators arrived, it was left to them to decide how the discussion of the guidelines should be organised. The Survey Report is the product of this six-month exercise by the survey team.

The role of the external team members was to guide the self-study process but not to influence it. Their task was to evaluate the information provided in three ways: guided description, qualitative questionnaire-style interview responses and some quantitative statistical analysis. This methodology is reflected in the Executive Summary, Survey Report, and Appendix B: Questionnaires.

In May 1992, the survey team met with government agency officials, non-governmental organisations, regional directors of education, politicians, tutors, students, school supervisors, heads of institutions and others throughout Ghana. A list of some of these individuals is included in Appendix A. Interviewees were particularly helpful in identifying many issues addressed in this report. They helped to validate the information it contains as well as its conclusions and recommendations. The major limitations of the study result from the shortage of time, the unavailability of certain individuals and the lack of current census data.

The report has three sections: I—Executive Summary; II—Survey Report; III—Appendices.

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EXECUTIVE SUMMARY

The Government of Ghana regards access to education as the most important means of development. Education policy seeks to provide Ghanaians, regardless of age or sex, with the opportunity to develop themselves to the best of their abilities. As far back as March 1964, there was recognition that distance education or correspondence delivery was needed to serve the needs of Ghanaians, the society in which they live and the country as a whole. Over the past decade, university committees and senior administrators have advocated the pivotal contribution that distance education can provide for the tertiary education system, for societal development and progress and for all Ghanaians. Government responsiveness to these needs and desires is only recent: "The government is looking critically at distance education as a way of offering greater opportunities to people who require further studies" (Esi Sutherland-Addy, Deputy Secretary for Education, November 1991).

Demand for higher education in Ghana has increased in recent years as a result of population growth and the increase in the number of successful secondary school leavers. The cost of tertiary education, especially for the universities, is exceptionally high. The small size of enrolments, the under-utilisation of teaching and research personnel and physical facilities and the student residential programme have contributed to the high cost. Non-conventional forms of instruction are effective and cost-efficient ways of strengthening instructional resources and more fully utilising physical facilities. Distance education is one important option to meet the demand for and access to higher education and to reduce costs both for government and for students and their families.

Demand and the unplanned diversification of the student population have serious implications both for future programme development and for the students. Not only must government provide for greater access to tertiary education for qualified people, but also it must significantly increase the proportion of female students. Educational planning needs to take into account the important role of women in socioeconomic development; distance education normally attracts a higher percentage of females than males, and it may serve to reduce the sex ratio disparity in Ghana's tertiary system.

Government must be responsive to needs and desires by taking action to establish a Distance Education Unit and by taking leadership in co-ordinating an integrated systems plan. The various subsectors of the tertiary education system must be co-ordinated to provide continuous access from secondary education and training to the tertiary system once funding for distance education programme development and delivery are obtained. The Ministry of Education and tertiary education personnel must develop an

organisational culture where they view themselves as "Partners in Tertiary Distance Education."

Programme and curriculum development have to be jointly planned and co-ordinated to ensure that duplication is minimal and educational design is appropriate and cost-effective. Distance education courses, even with adequate staff and production services, require a two- to three-year development cycle. Appropriate courseware may be obtained from other African countries or from overseas and modified for immediate use in Ghana. Immediate experience with distance education delivery will not only assist in developing an administrative infrastructure, but also it will aid in the development of local courses. Once courses are developed, a programme of curriculum maintenance and revision needs to be implemented to ensure their academic credibility.

Potential inequalities of educational status, opportunities and services because of the difference in programme delivery and the distance of certain settlements from tertiary education centres are to be avoided. No distinction should be made on student transcripts regarding the mode of course delivery. Ownership of courses and programmes should reside with the university and academic unit offering them. There should be decentralisation to take the "distance out of distance education." For example, because it is important that students receive professional guidance and assistance from informed, caring personnel, local tutors should be assigned marking responsibilities whenever possible, thus leading them to interact spontaneously face-to-face with students. It is pedagogically unsound for students to have to wait too long for a university-based marker to respond. Moreover, to avoid delays and storage problems at headquarters, course materials should be sent to regional centres for distribution. These changes would not only increase efficiency but would also be cost-effective. There would be intangible benefits both for each Ghanaian student and for the nation—higher completion rates and an educated citizenry.

Government and the universities must make distance education a priority to serve a population who would not otherwise have access to education. Funding needs to be sought to establish a Distance Education Unit. Resources should be allocated for instruction, administration and production. Additionally, to meet the academic needs of students and instructors, core positions must be created in both professional and support staff. Once the distance education unit has been established, administration should strive to increase and maintain staff productivity and efficiency; this process can be aided through donor and domestic financial support to obtain microcomputers for desktop publishing and systems management.

Lastly, the Ministry of Education must realise that making the most of human resources will provide the greatest help to creating a Distance

Education Unit. Distance education staff are generally highly committed, and they work extremely hard to co-ordinate activities in the system. However, they need further training in the specialised field of distance education. A quality Distance Education Unit has to be able to develop and maintain performance in three dimensions: efficiency and effectiveness, capacity and sustainability. For government, managing human performance and development is both a journey and a destination: this is an important legacy for all Ghanaians.

Recommendations

The recommendations that follow are based on interviews with government officials, nongovernmental officials, education administrators, politicians, students, teachers, heads of institutions and others and on the survey team's findings. They are the product of a six-month exercise by the team. The recommendations are proposed to assist the Government of Ghana and its universities in achieving their objectives for national human resource development in general and for the educational sector in particular.

Recommendations for Government

1. That in these critical financial times for Ghana, maximum use be made of all available resources. In this regard, the Institute of Adult Education, University of Ghana, which has equipment and offices in all regions of Ghana and considerable experience in distance education programming, should have its capacity strengthened to serve on an interim basis as a national tertiary-level distance education programme involving all three universities in Ghana. It will be necessary to promote interest in this delivery mode, and the Ministry of Education through its Higher Education Division should establish a Distance Education Unit to co-ordinate the development and delivery of distance education courses and programmes and eventually establish distance education units in each university.

2. That the Ministry of Education in consultation with its Committee of Vice-Chancellors establish a Task Force consisting of the Pro-Vice-Chancellors of the three universities and three senior members, one from each institution, and a representative from the Higher Education Division. The Task Force members will need to be imbued with commitment and an understanding that they are "Partners in Tertiary Distance Education."

3. That the Task Force be charged, inter alia, with the implementation of the recommendations of this report and the co-ordination of various tertiary distance education initiatives.

4. That in time the Ministry of Education consider the expansion of the Task Force to be constituted as a National Council for Distance Education. The Council should include representatives from selected tertiary institutions, professional bodies, the private sector and the general public.

5. That the Ministry of Education ensure that the Distance Education Unit is funded directly and adequately and that the Unit is accorded financial autonomy to raise its own funds from donors and services rendered.

6. That the Ministry of Education provide increased educational opportunities at the post-secondary level and reduce inequalities by directing the education system to share its facilities and learning resources throughout Ghana for distance education delivery.

7. That the Ministry of Education and its tertiary education system should ensure that any person in Ghana who qualifies and so desires, irrespective of residence or student status, has the opportunity to complete appropriately recognised university degree, diploma, certificate, professional and other approved programmes and courses through effective and cost-efficient distance learning methods.

8. That the tertiary system will offer its educational programmes through an assortment of distance education methods and media. The appropriateness will be determined by evidence of effective instructional design, recognising such factors as subject matter, learner cultural and individual characteristics, numbers and geographical dispersion and costs.

9. That the tertiary system will endeavour to offer programmes and courses that address demonstrable needs and that complement the activities of other institutions and organisations in Ghana's educational system.

10. That regular and appropriate evaluation of the programmes and courses offered throughout the system will be conducted to maintain the effectiveness and cost efficiency of Ghana's distance learning systems. To ensure continuing quality, a programme for maintaining and revising course materials must also be put into effect.

11. That the Ministry of Education will establish its programmes through a co-operative planning process that recognises the individual responsibilities, unique contributions and autonomy of each member institution.

12. That the Ministry of Education will encourage long-term planning for distance educational programming and will work to ensure continuous provision of financial and other resources required to implement approved plans.

13. That future priority be given to developing continuing education courses to ensure that government is effectively meeting the long-term national needs for upper-middle and high-level manpower development, such as public administration, accounting, bookkeeping, small business management, diploma programmes for teachers, technical and vocational courses.

Recommendations for the Universities

1. That the Committee of Vice-Chancellors through their various Academic Boards, Faculties and Departments assist the Task Force and the Distance Education Unit to implement a tertiary level distance education programme for Ghana.

2. That the universities develop distance education programmes where there is clear evidence of need with regard to the nature and size of the Ghanaian student population to be served, national policies and priorities, long-range plans of the country and member institutions and the activities of others in Ghana's tertiary system. An effort should be made to minimise the duplication of activities of others in the rest of the tertiary education system

3. That the universities will offer full programmes of study for which they have institutional strength and uniqueness, rather than offering only isolated courses. The programmes and courses will be owned, offered and accredited by each university and its relevant academic unit but co-ordinated by the Distance Education Unit through an institutional distance education office.

4. That the universities should apply their normal review processes for approving distance education courses and programmes.

5. That the universities explore the possibility of implementing curriculum design to a system of directed independent studies in which students are paced through their course content with completion deadlines rather than an open-ended system of study.

6. That distance education course materials be distributed and administered from regional and district centres wherever resources are available.

7. That the universities should organise and conduct training and orientation programmes for all staff involved in distance education activities.

8. That the Distance Education Unit strive to market distance education programmes and courses by developing an information brochure and posters and by the use of public media.

9. That the universities strive to identify the best services and sources of training available to their programmes and strengthen on-going relationships and seek out attachments with local and overseas training institutions. Priority should be given to seeking assistance from a donor to sponsor the attachment of an experienced distance educator to the Distance Education Unit to help with staff training and programme development.

REPORT OF SURVEY ON DISTANCE EDUCATION IN GHANA

A. THE NATIONAL CONTEXT

1.0 National Profile

1.1 Brief History

Ghana derives its name from one of the ancient Sudanese empires, the Ghana Empire, established in the Western Sudan during the Middle Ages. During the 19th century, the British, who had already gained control of the coastline, moved inland, and by 1901 they were administering the Gold Coast Colony, Ashanti and the Northern Territories. These areas became collectively known as the Gold Coast. The Gold Coast attained internal self-government in April 1954, and it was granted full independence by the British in 1957 under the name Ghana and became a member of the Commonwealth. It became a republic in 1960 (see Map 1).

Map 1: Ghana and West Africa
Source: Dickson, Kwamina B. and Benneh, G. (1988). *A New Geography of Ghana*. Longmans, London.

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1.2 Geography

The Republic of Ghana is one of the southern tier of nations in the great bulge of West Africa that faces the Gulf of Guinea. The total area is approximately 239,656 square kilometres, and the country extends for 672 kilometres from south to north and 536 kilometres from east to west. Ghana is bounded on the east by Republic of Togo, on the north by Burkina Faso, on the west by La Côte d'Ivoire and on the south by the Gulf of Guinea in the Atlantic Ocean. Ghana has five major topographical regions: the low plains in the southern part extend as a belt along the entire coastal area of the Gulf of Guinea; to the north of the plains lie three distinct regions—the Ashanti Uplands, the Volta Basin and the Akwapim-Togo Ranges; and in the northern and northwestern areas are the high plains, which form part of a belt that stretches eastward and westward through West Africa.

Tropical climate conditions prevail in Ghana with an average annual precipitation of 72.4 mm. The average maximum temperatures are between 31° and 36° Celsius. The minimum average temperatures range between 20° and 22°C. The average relative humidity in the coastal and forest areas is about 95 per cent in the morning throughout the year, decreasing to about 70 per cent in the afternoon during the rainy season and to about 60 per cent during the dry season. The rainy season extends from April to September, and the dry season from October to March. The Harmattan season (dry, hot and dusty winds) prevails from December to March throughout the country, but it is more severe in the northern sector.

1.3 Population

Estimates based on the 1970 and 1984 Ghana Population Census suggest that the 1991 population was about 14.8 million. The population density is about 61.5 people per square kilometre, with the bulk of the population concentrated in the southern sector of the country. The highest densities are in the urban areas and in the cocoa-producing areas of the south. The largest populated administrative regions are Ashanti Region (2.5 million), Greater Accra Region (1.7 million), Eastern Region (2.02 million), the Volta Region (1.45 million) and the Brong-Ahafo Region (1.45 million). At the present rate of population growth, Ghana is expected to reach 24 million by the year 2000. The population figures for the main urban centres are as follows: Accra (1,187,876), Kumasi (388,921), Tamale (173,695), Tema (128,727), Sekondi-Takoradi (94,056), Obuasi (84,824), Koforidua (66,153), Cape Coast (61,023), Ashiaman (76,955) and Ho (47,262) (Census Report, 1984).

According to the 1970 and 1984 census, Ghana's population growth rate is about 2.6 per cent per year, as a result of a high fertility rate of about 6.4 and a declining mortality rate. The majority of Ghanaians, especially women, live in rural areas. The 1991 estimate indicates that 5.1 million (68%) of the approximately 7.5 million women live in rural areas. However, Ghana's population is becoming more urbanised at a rapid rate. Today almost one in three Ghanaians live in a city or town of more than 5,000 people. If current trends continue, by the year 2020 more than half of all Ghanaians will live in urban areas.

Ghana has a distorted population structure; the imbalance is in favour of women (50.7%) and the young (45%) according to the 1984 population report. This indicates that almost half the population is below 15 years of age and that there are more women than men in all age groups, especially between the ages of 20 and 44 years, in which there is a ratio of 103 women to 100 men. These numbers are partly accounted for by international male migration for employment, but population counts that include citizens absent abroad are also distorted in favour of women in all age groups.

1.4 Ethnicity, Language and Religion

Ghana remains rural in its customs and lifestyle. The village is the central influential force in the lives of Ghanaians, even though they may not reside in their villages. Village activities are organised around the chief, and each village normally forms part of a larger traditional area that is headed by a paramount chief.

English is the official language of Ghana and the medium of instruction from primary class four. The main ethnic groups are the Akan (the Twi- and Fante-speaking people), the Ewe, Dagomba, Ga, Nzema, Dagaba and Frafra, with Akan, Ewe, Ga, Hausa, Dagbani and Nzema as the major languages. These languages are spoken on national radio and television.

Religious practices vary in Ghana. Approximately 47 per cent of the population practise some form of Christianity, particularly orthodox and pentecostal beliefs. Traditional beliefs of ancestor worship combined with elements of Christianity are followed by about 15 per cent of the people. Twenty-eight per cent are Moslem adherents, and 10 per cent are others.

1.5 Politics and Administration

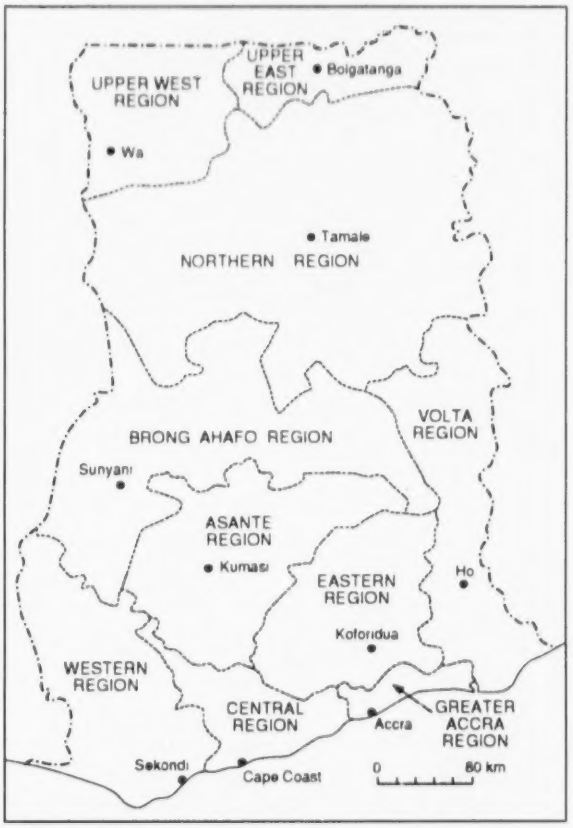
Ghana has a military-led government that came to power on 31 December 1981. The government is known as the Provisional National Defence Council (PNDC) and is headed by a Chairman. The Council has 9 members. The PNDC has decided to return the country to constitutional rule by early 1993. Government Ministries are headed by PNDC Secretaries.

Ghana is divided into ten administrative regions: Greater Accra, Western, Central, Eastern, Volta, Ashanti, Brong-Ahafo, Northern, Upper West and Upper East. The ten regions are divided into 110 districts in all, and each is made up of municipal, town and area councils. There are about 52,000 settlements in Ghana; most of them are villages of less than 5,000 people. Districts and local units are administered by district assembles; two-thirds are elected and one-third is appointed by government.

Each administrative region has a PNDC Regional Secretary, and each district is headed by a PNDC District Secretary. There is no legislative assembly; the PNDC rules by decree. There is a National House of Chiefs based in Kumasi and a Regional House of Chiefs in each regional capital. The Regional House of Chiefs consists of all the paramount chiefs from each of the 10 administrative regions of Ghana (see Map 2).

Three legal systems operate in Ghana at the moment; namely, the traditional (in villages and administered by chiefs and elders), the British inherited system and the Public Tribunal system, which was introduced by the PNDC. The Public Tribunals have lawyers as Chairmen, but they are composed mainly of lay people. Legal technicalities are almost totally absent in Public Tribunal operations.

At the village level, the office of chief is the prominent institution. It falls outside the framework of government structure, and its legitimacy stems from its historical role in tribal politics. The position of chief serves as a decision-making forum for community legal issues, and it is often used by Government to introduce development projects. The chief still possesses many traditional roles whose meaning in the daily life of the ordinary rural person is far more important than that of the distant government in Accra.



Map 2: Administrative Regions of Ghana
Source: Dickson, Kwamina B. and Benneh, G. (1988). *A New Geography of Ghana*. Longmans, London.

1.6 Economic Features

At the time of Independence, Ghana's population was rural and dependent almost exclusively on agriculture, although minerals such as bauxite, gold and diamonds were and still are important exports. Since the 1960s, Ghana has been subjected to a number of economic crises in the dual economy, particularly between 1980 and 1983. To resolve chronic and complex problems, the Provisional National Defence Council (PNDC) Government launched an economic reform programme in 1983 that was aimed at stabilisation and structural adjustment. The Economic Recovery Programme (ERP) initiated short- and medium-term strategies.

The first phase of the programme (1983-86), the stabilisation phase, aimed to halt the decline in the industrial and commodity sectors, while the second phase (1987-89) implemented policies for structural adjustment and development. The programme has sought to: raise

relative prices in favour of production and export; restore financial and monetary discipline; rehabilitate the social and productive infrastructure; encourage private investment; and promote the efficiency of the public sector. The measures have produced positive results, especially in the mining, timber, cocoa and nontraditional export sectors. For example, between 1984 and 1988, the production of yams increased from 725,000 to 1,200,000 metric tonnes; maize production rose from 574,000 to 600,000 metric tonnes; and rice production increased from 76,000 to 95,000 metric tonnes. In 1990, there was a major decline in the production of all these crops because of unfavourable weather conditions. However, the 1991 estimates have shown an increase of 46 per cent, 64 per cent and 63 per cent in the production of yams, maize and rice respectively.

Despite fluctuations, the rate of inflation has been substantially reduced from upwards of 112.8 per cent in early 1983; it was 10.4 per cent in 1985, 15 per cent in 1987, 35.6 per cent in 1988, 37.3 per cent in 1990 and about 13.1 per cent in 1991. The sharp rise of inflation in 1988 and 1990 was occasioned by the introduction of the weekly Foreign Exchange Auction. In 1983 real GDP growth, according to the Bank of Ghana, was a negative 2.9 per cent showing improvement, though at fluctuating rates in subsequent years, at 7.6 per cent in 1984, 5.1 per cent in 1985, 6.2 per cent in 1988, reducing to 2.8 per cent in 1990. The average growth rate for the 1984-90 period is about 4.9 per cent.

The economic growth of the late 1980s and the efficient use of government revenues to provide services throughout the country have had positive benefits for women, school-age children and infants. Women are the majority givers and receivers of social services; they predominate in the education and community service sectors. According to the 1984 population census, it was estimated that about 66.7 per cent of all primary school age children were attending school. The infant mortality rate in 1991 was about 84 per 1000.

In the 1960s, cocoa was the main source of Ghana's income. The record production of 566,000 tonnes in 1964/65, which was about one-third of the world output, declined from the late 1960s through the 1970s to a mere 158,956 tonnes in 1983/84. Bush fires in 1983 destroyed some 60,000 hectares of cocoa farms. Since then output increased by 10 per cent in 1984/85, and there was a similar increase in 1985/86. Incentives and other measures were introduced by government to improve production and quality. Figures released by the Ghana Cocoa Board show that in 1988 about 200,904 metric tonnes of cocoa were exported, and in 1991 production is estimated to be 293,350 tonnes.

There is growing indication that despite increases in agricultural production, such as rice, maize, cocoa, yams and plantains, dependence upon external market institutions remains.

Timber and mining exports have continued to improve in the last half of the 1980s. For example, according to statistics released by the Ministry of Finance and Economic Planning, gold production declined from 670,000 fine ounces in 1970 to 230,000 fine ounces in 1983, but it has since been rising; production in 1990 exceeded 500,000 fine ounces. It is expected to reach 1 million fine ounces by 1995.

The 1984 rate of unemployment was estimated as 6.1 per cent in urban areas and 1.4 per cent in rural areas. The rate of unemployment is expected to grow higher in the 1990s, given the high rate of population growth and the rapidly increasing number of people under 15 years of age who will be entering the employment market. Many of the problems will be more severe for women than men. The economic situation of female-headed households is usually worse than that of male-headed households.

1.7 Communication and Media

Roads are the most important means of communication, used for transporting both goods and people. Road transport accounts for the bulk of passenger and freight traffic in Ghana. There are sealed or paved roads linking the port towns with the important regional and district capitals. These include major roads, such as the coastal Aflao-Accra-Takoradi-Elubo, Accra-Kumasi and Tema-Akosombo roads. Overall, southern Ghana has a dense network of roads, especially in the Central and Eastern Regions. In northern Ghana, there are four principal trunk roads, three of which link the north to Kumasi. These roads include the Kumasi-Tamale-Paga road, the Kumasi-Yeji-Salaga-Tamale road and the Kumasi-Wenchi-Wa-Hamile road to the west. The eastern road that runs through the Volta Region to the north is the Ho-Bimbila-Nakpanduri-Bawku-Kulungugu road.

Feeder roads connect the main roads with farming communities in the countryside. In conjunction with the World Bank and International Monetary Fund (IMF), the Government of Ghana has been able to rehabilitate 5,986 kilometres of trunk roads throughout the country since 1982. It has also completed 18 major trunk roads, repaired 42 bridges and regravelled 1,071 kilometres of roads. The Department of Feeder Roads rehabilitated 2,300 kilometres of feeder roads between 1985 and 1990. By the first quarter of 1992, an additional 1,500 kilometres of feeder roads are expected to be completed.

The railway system consists of three main lines: the Western line running from Sekondi to Kumasi, the Eastern line from Accra to Kumasi and the Central line from Hunni-Valley to Kade-Achiasi-Kotoku. Short branches run from Accra to Tema, Tarkwa to Prestea and Dunkwa to Awaso. The railway system under the Ghana Railway Corporation is currently serviced by a fleet of 800 goods wagons and 90 passenger coaches. The system is very important to the economic development of Ghana. The export of commodities, such as cocoa, timber, bauxite and manganese, is dependent upon the railway to connect vital economic centres with the main exporting ports.

Ocean transport is a major form of transportation between Ghana and the rest of the world. The two modern artificial harbours at Takoradi and Tema are the principal ports. Takoradi is the main exporting port, handling manganese, bauxite, timber and cocoa from the Western, Ashanti, Brong-Ahafo and Central Regions. On the other hand, Tema harbour specialises in receiving imports. In its Economic Recovery Programme, the Government has invested more than US$100 million since 1986 in foreign loans on port rehabilitation projects for Tema and Takoradi ports. The projects sought among other thing to rehabilitate and modernise the two ports, repair existing infrastructure and facilities, remove sunken vessels and other wrecks, repair salvageable equipment, provide cargo-handling facilities and floating craft, provide communication and office equipment and make available container facilities for Tema.

As far as inland water transport is concerned, in the past the Ankobra and Tano Rivers were important, but they have been superseded by road and rail transport. Today, Volta Lake, the world's largest man-made lake, with a surface area of 8,350 kilometres and coast line of 4,000 kilometres, provides Ghana with excellent inland water transport opportunities. Although Volta Lake's potential has not been fully exploited, it is playing a significant role in the economic development of northern Ghana. The Volta Lake Transport Company (VLTC), owned solely by the Volta River Authority on behalf of the Government, is the only organised inland water transport system in Ghana. VLTC has two expanded and improved port facilities at Akosombo and Buipe with new floating units, such as barges, pusher tugs, movable ramps and docks. In addition, the company has installed navigational aids and telecommunication facilities, a modern workshop with repair facilities and fuel jetties at the two ports. Statistics published in the Information Services Department book entitled *An Official Handbook of Ghana (1991)* indicate that freight tonnage increased from 21,306 tonnes in 1985 to 47,257 tonnes in 1989. In 1989/90, VLTC carried 60 per cent of the sheanut crop exported

through Tema port, and it also handled a substantial volume of the fertiliser destined for farms in the three northern regions. VLTC also engages in the transportation of diesel oil for the north. The lake transport system opened up communities on the lakeshore that previously had no means of transport for their economic activities.

Direct flights link Accra international airport with other major international airports, such as Lagos, Abidjan, Monrovia, Freetown, Conakry, Banjul, Dakar, Las Palmas, Lome and Cotonou, on a highly patronised West Coast Service with Ghana Airways. Recently, Harare has been added to the routes. There are direct flight links between Accra and Rome, London and Dusseldorf. Internal air transport is handled solely by Ghana Airways, which mainly carries passengers and small lightweight goods. The towns and cities served are Tamale, Sunyani, Kumasi and Takoradi.

The postal system depends primarily on the highway system and to a lesser extent on train, water and air services. By the end of 1991, there were 285 post offices and 723 postal agencies throughout the country; these are in a phase of modernisation and expansion. In April 1990, the Expedited Mail Service (EMS) was introduced. EMS, an express courier service, now competes favourably with international couriers, such as DHL, which operate in most countries of the world.

Ghana's telecommunications system has been able to create a full digital network at the switch and long distance transmission level. A telecommunication project was launched in 1975, and it involved the rehabilitation, modernisation and expansion of the entire national telecommunication system. Among other things, the project provided: new digital telephone exchanges, tertiary digital exchanges, microwave transmission system from south to north with television transmission and reception capability and satellite earth station, including international telephone and telex gateway switches. A second project introduced in 1987 addressed other areas that could not be covered under the first project. The project components included the procurement of switching equipment, radio and multiplex equipment and facsimile machines and the rehabilitation of existing cable networks at urban centres and 26 rural communities. At the moment, Ghana can boast of a relatively well-developed telecommunication system, and expectations are that by the end of 1993, a solid foundation will have been laid for further improvement.

There is a single national broadcasting service in Ghana known as the Ghana Broadcasting Corporation (GBC). The GBC undertakes radio broadcasting and television transmissions. Under the radio division are Radio 1, Radio 2 and the External Service of Radio Ghana.

Programmes are broadcast in six principal Ghanaian languages—Akan, Dagbani, Ewe, Ga, Hausa and Nzema—on Radio 1, which operates 16.5 hours on weekdays and 17.5 hours on weekends and public holidays. Radio 2 broadcasts programmes in English and combines its public service functions with commerical broadcasting. It operates for the same number of hours as Radio 1. Both Radio 1 and Radio 2 also broadcast educational programmes for schools and colleges. The External Service broadcasts in English, French and Hausa to the West African sub-region.

Community Radio stations have been established in three communities in Ghana, namely: Accra FM Station, Apam FM Station (90 kilometres west of Accra) and the Upper Region Area Radio FM Station in Bolgatanga.

Television service was established in 1965, and by the end of 1984 it covered nearly 70 per cent of the country's physical area. Only one channel is operated with a total of 8 transmitters. There are 9 Lower Power Repeaters situated at vantage points all over the country. Television transmission is 625/50, and the standard for Ghana is colour-PAL system. As a result of the installation of the transmitters at Amedzofe in the Volta Region and Bolgatanga in the Upper East Region, television viewing throughout the country is now simultaneous. As of the end of 1991, TV coverage was 100 per cent even though reception in some areas is poor.

There are approximately 240,000 TV sets and 4.8 million viewers in the country. It is envisaged that with the extension of electricity to all 110 district capitals and surrounding towns and villages the number of TV sets and viewers will increase and that in the long run distance education programme delivery will therefore be enhanced.

B. THE EDUCATIONAL CONTEXT

1.0 Education Profile

1.1 Government Objectives and Priorities

The Government of Ghana regards education as the most important means of development. Its education policy seeks to provide Ghanaians, regardlesss of age or sex, with the opportunity to develop themselves to the best of their abilities. As far back as 1974 with the Dzobo Report, there was recognition that Education Reform was needed to serve the needs of individuals, the society in which they live

and the country as a whole. Proponents of reform believed that in a country like Ghana education should aim to instil in the individual an appreciation of the need for change that is directed towards the development of the country's human resources. However, it was not until 1986 that a major education reform programme was proposed. The Education Reform Programme (ERP), first implemented in 1987, was initiated to work towards the achievement of the following national goals and objectives:

- To increase access to education for all Ghanaians.
- To reduce the drop-out and non-attendance rates.
- To reform the education structure by reducing pre-university education for all from a maximum of 17 to 12 years (6:3:3) without sacrificing quality.
- To make the content of education more relevant to Ghanaian needs.
- To improve the quality of education.
- To make education cost effective by improving management policies and community involvement in the provision of school facilities, such as school buildings.
- To reduce the level of illiteracy and eliminate it by the year 2000.
- To manage resources so that reforms can be sustained after the adjustment period.

1.2 Educational Problems

The main problems that the ERP is addressing are:

- shortage of qualified teachers, books, buildings, educational materials and equipment.
- reduced level of government expenditure on education.
- inadequate data and information needed for manpower and educational planning.
- high adult illiteracy rate—about 70 per cent, i.e., 5.2 million adult illiterates, according to the 1984 census.

- lack of opportunities for schooling and low school enrolment figures in certain areas.

1.3 The School System

Education is considered the most important means through which national development can be accelerated, and it has always received considerable attention. Even in the days when there were few secondary schools, people travelled to Britain to obtain education. Quality education has always been associated with Ghana.

The first schools were *castle schools* established by European traders in the 18th century mainly to teach mulatto children and a few blacks on the coast. The first teacher training college was started in 1847 at Akropong-Akwapim by the Basel (Presbyterian) Mission. The first secondary school, Mfantsipim, was started in 1876 at Cape Coast. These initial efforts were made by missionaries and local people. The government started its own schools after 1900; its first training college (Accra) was started in 1910; and its first secondary school (Achimota) was started in 1927. Education received a big boost in 1951 when the first African Government, led by Dr. Kwame Nkrumah, introduced the Accelerated Development Plan for Education. Among other things, the plan expanded access to education and made primary school education fee-free. By the 1970s Ghana's education system was admired all over Africa, and even beyond.

Even though Ghana's Government was late in providing schools, it now runs almost all educational institutions, except at the pre-school level, where most schools are privately run.

1.4 The Pre-Primary School Level

Pre-school, nursery and kindergarten education covers children aged 3 to 5 years. It is not compulsory because not every public primary school has a nursery school attached to it. Most pre-schools are currently located in urban centres, and the majority are operated by private individuals, organisations and community groups. However, the Ministry of Education has to grant permission from year to year to run such schools, and periodic checks are conducted by the Ministry.

The pre-schools are found mainly in urban areas because it is working mothers who need their services; in rural areas, the extended family system meets the needs of pre-school children. In 1991, there were about 2,800 public sector pre-schools throughout Ghana with 182,527 pupils. Private pre-schools totalled about 570. The Ghana Education

Service (GES) established a National Nursery Teacher's Training Centre to ensure that nursery schools are managed properly. There are certified teachers with specialities in nursery education, and nursery attendants are trained by centre staff. Efforts are made by GES, District Assemblies, the 31st December Women's Movement and other organisations to enable as many children as possible to gain access to and benefits from pre-school education.

1.5 The Primary School Level

In 1961 Parliament enacted a 10-year basic education programme. Under it, Ghana had a 6-year free and compulsory primary education programme for all children 6 years of age and above. Primary school was followed by a 4-year middle school education.

The old programme is being phased out and replaced by a new one introduced on a nationwide basis in 1987 under the Education Reform Programme, which has operated on an experimental basis since 1976. The new programme is a 6-3-3-4 model that includes 6 years primary, 3 years junior secondary (JSS), 3 years senior secondary (SSS) and 4 years university education. The first two stages of the programme, namely, the primary and junior secondary, are compulsory for all children of school age. The intention is that every Ghanaian child should have a compulsory 9-year basic education.

The 6-year primary school curriculum is geared not to train the pupils for specific vocations but to:

- expose them to a variety of ideas and skills,
- build in them values that will help them cope creatively with their environment and
- produce human resource assets for Ghana.

The curriculum includes the traditional 3 R's as well as cultural studies, social studies, life skills, science, agriculture, Ghanaian languages and sports and science. In the 1989/90 academic year, there were 9,831 primary schools with a total enrolment of 1,703,074 with 62,859 teachers (Ministry of Education Planning Division, Document 45, July 1990). It is estimated that this figure represents 57 per cent of children of school age (*An Official Handbook of Ghana, 1991*). This leaves 43 per cent in that age group out of school.

1.6 Junior Secondary School (JSS) Level

The JSS, which had been run on experimental basis since 1976, was introduced on a national scale in September 1987 to replace the Middle School. The 3-year course is vocationally biased with students learning technical drawing, agriculture and vocational skills and, in addition, traditional subjects such as English, mathematics and science. The programme is both terminal and continuing in the sense that school leavers may enter the job market, enrol in apprenticeship training or continue to the Senior Secondary School (SSS). At the end of the JSS, all students take the Basic Education Certificate Examination (BECE) in twelve subjects (or thirteen if French is taught in the school). Those who pass with aggregates up to 36 in their six best subjects qualify to enter SSS. The first two sets of JSS graduates have passed, but some with good pass marks have not been able to find placements in SSS (grades range from 1-9 and the final scores have a continuous assessment element of 40 per cent and an external examination element of 60 per cent). Those who are unable to enter SSS join the job market or take up various kinds of apprenticeship.

It has not been easy finding places in SSS for all those who qualify. The following table explains the situation:

Table 1: JSS Enrolment Statistics

	# Entered	**# Passed**	**# Gained Admission into SSS**	**% Of those passed**
1990	127,476	107,906	49,078	38%
1991	149,038	121,255	54,618	45%

Out of the 127,476 students who sat for the BECE in 1990, 2,244 scored the top aggregate of 6 in six subjects. Most of them were in educationally developed regions of Greater Accra (866), Eastern Region (367), Ashanti (259), and Volta Region (214).

In the less educational regions of Upper West (26) and Upper East (24), the number of good passes was rather low. In all 107,906 obtained the aggregate of 36 needed to enter SSS, but only 38 per cent found places.

Total enrolment in JSS 1-3 in 1989/90 was about 507,168 (Ghana Statistical Service, 1991). Total SSS places are around 250,000 (50%). This means that there are a lot of JSS graduates who cannot find places in the SSS system.

1.7 Senior Secondary School (SSS) Level

Students are still in the pre-reform secondary school system. It was a five-year course leading to the West African School Certificate/General Certificate of Education "Ordinary" Level Examination. Those who do well continue for a two-year Sixth Form course at the end of which they take the GCE, "Advanced" Level examination. To qualify for university, students require 3 "A" Level passes, plus a pass in a subsidiary subject called the General Paper.

The last enrolees in the old system are now in secondary Form 3, and they are due to write the "O" Level examinations in June 1994 and the "A" Level examinations in June 1996.

Students who want to enter secondary schools have to write the Common Entrance Examination (CEE) from Class 6 through Middle Form 4. Those who do not gain admission to secondary schools by Form 3 continue to Form 4, that is, the 10th year of basic education and take the Middle School Leaving Certificate Examination (MSLC). Students can take both the CEE and MSLC as well as the entrance examination to post-primary teacher training colleges.

The first students in the new SSS programme are currently in their second year (1991-92). The programme is designed to absorb 50 per cent of JSS graduates, but it has not been able to achieve this goal for a variety of reasons. About 150 new secondary schools have been opened in the past two years in addition to the 255 existing ones to make a total of 405 with an average enrolment of 600. Enrolment in secondary schools in 1989/90 was 168,000 (Ministry of Education Planning Division, 1990), but it has increased in the current academic year.

The new programme requires students to study 7 core subjects, namely English language, mathematics, science, life skills, a Ghanaian language, agricultural and environmental science and physical education; the last subject is not examined externally. In addition to the core, all students are required to read 3 electives from only one of the following 5 fields of specialisation: agriculture, vocational, business, technical and general—arts or science.

At the completion of the SSS programme, all students will write an external examination. As at the JSS level, a combination of continuous assessment and external examinations determine the level of pass grades.

1.8 Teacher Education

Teacher education is currently a post-secondary course. Two credits and five passes at the School Certificate/G.C.E. "O" Level are the minimum qualifications for entry into any of the 38 teacher training colleges, which had an enrolment of 16,106 in 1989/90.

These colleges train teachers for basic education schools. Successful candidates earn the Ghana Teachers' Certificate "A", which is the basic qualification for teachers in Ghana.

Unfortunately, good students rarely go to the basic teacher training colleges because of the low allowances paid and the unattractive working conditions in the Ghana Education Service. For example, while nurses and agricultural students in training receive about ¢12,000 per month as allowances, teacher trainees were receiving only about ¢1,000 until recently; this inequitity was eliminated in September 1991.

In addition, there are 7 diploma/specialist training colleges that train teachers for lower levels of secondary schools. Entry to diploma colleges is based on teachers' certificate "A" and G.C.E. passes. The courses are at a relatively high level, and a few alterations could turn such institutions into degree-awarding institutions; in fact, there are plans to do so. However, there is currently very little by way of course linkage between diploma-awarding institutions and universities. Many of the students are eager to take university degrees, and the University of Cape Coast is working out a programme to enable them to do so. Distance education will surely benefit many of these teachers.

Figures from the Ghana Education Service show that 33.6 per cent of teachers in primary schools and 35.1 per cent in the JSS in 1989/90 were untrained. The situation has not changed much since then.

The University of Cape Coast has the primary function of training teachers for secondary schools and teacher training colleges. However, the supply is below the demand, and graduates from the University of Ghana and the University of Science and Technology supplement what Cape Coast produces. Nearly 40 per cent of the 8,564 secondary school teachers are untrained.

1.9 Polytechnics

The 6 Polytechnics in Ghana have a total enrolment of 9,135 full-time and part-time students (Ghana Statistical Service, 1991). There are many part-timers because space is limited and because all students are

not able to pursue full-time studies. Some of these students could benefit from distance education courses if such courses were available.

The most popular courses in the polytechnic are business studies and engineering. Other course offerings are concreting, carpentry and joinery, catering, dispensing technician, fashion and dressmaking, painting and decorating, plumbing, refrigeration, science laboratory technology and welding. Remedial G.C.E. "O" and "A" Levels are also run at some of these institutions.

1.10 Universities

There are 3 Universities in Ghana, and they had a total enrolment of 9,596 in 1989/90. The projection for the year 1997 is 28,000. This number is rather low in view of national manpower requirements. Enrolment continues to grow as more non-residential students are admitted. These students are usually those with weaker grades, and they are supposed to live in town and commute to university campuses for lectures. However, almost all of them have become squatters, or "perchers" as they are called; they share rooms with friends and course mates. Rooms that should have two students sometimes have four or more. This had led to deterioration of facilities; lecture rooms and laboratories are overcrowded, and toilet facilities are overburdened and rendered almost unusable. Students and the general public have complained bitterly about the situation.

The non-resident system is not working smoothly because of the lack of hostel facilities in Ghana generally, but more particularly in the university towns of Accra, Kumasi and Cape Coast. Transport facilities are also inefficient and unreliable.

Government and the Universities have been appealing to donor agencies and individuals to help alleviate the problem, but little has been achieved so far.

Until recently, university education had been free; any Ghanaian who entered one of the three Universities was automatically awarded a scholarship to cover boarding, lodging and tuition. An additional allowance introduced a book loan scheme, which enabled students to borrow from the Ghana Commercial Bank and the Social Security and National Insurance Trust (SSNIT) to purchase books. Few beneficiaries have paid back the loans, but efforts are being made to collect their arrears. The whole system of the student loan scheme is being streamlined.

In 1988, the government introduced, against student protest, a scheme by which tuition and lodging remained free, but students had to take a loan (currently ¢80,000 per annum) to supplement costs for food and books. The loans are now administered solely by SSNIT. The interest rate is 19.5 per cent, of which government pays 16.5 per cent and students pay 3 per cent. Payment starts soon after graduation. A few scholarships and bursaries are still administered on the basis of excellent academic performance and national development needs.

In spite of the difficulties in the universities that students, lecturers and parents complain about, demand still outstrips available places, as shown in the tables below:

Table 2: University of Ghana Statistics, 1988-1992

	# Qualified	# Admitted	# Registered	% of Qualified Students Registered
1988/89	2,712	1,697	1,199	71
1989/90	1,701	1,525	1,169	69
1990/91	2,796	1,667	1,141	41
1991/92	3,528	2,055	1,457	41

Table 3: University of Science and Technology Statistics, 1988-1992

	# Qualified	# Admitted	% of No. Admitted
1988/89	4,131	1,098	27
1989/90	3,926	1,038	26
1990/91	4,671	1,377	29
1991/92	5,707	1,631	29

Table 4: University of Cape Coast Statistics, 1988-1992

	# Qualified	# Admitted	% of No. Admitted
1988/89	1,573	516	33%
1989/90	1,107	603	54%
1990/91	*	(693)	*
1991/92	2,525	801	32%

* Figures are not available.

A distance education programme could go a long way to increase access to education for the several thousands who qualify but are unable to gain admission into the universities.

1.11 Nonformal Education Division (NFED)

Various nonformal education activities have gone on in Ghana over the years. They have been run by a variety of agencies and organisations. In 1988, however, a Nonformal Education Division headed by a National Co-ordinator was set up at the Ministry of Education to co-ordinate all nonformal education activities in Ghana.

The division's main objectives are:

- To enable participants to meet their personal or social needs better by enhancing their abilities to deal competently with everyday life in a literate community.
- To equip learners with the knowledge, attitudes and skills that will enable them to raise the quality of life in their communities.
- To enable learners to improve their occupational skills through functional literacy.
- To broaden the reading interest of learners and establish an attitude of reading for pleasure through the provision of follow-up literacy materials.

The major impact of the NFED in recent years has been a national literacy drive, in which 290,923 people were involved as of 31 May 1991 (Ministry of Education, 1991), and the establishment of Integrated Community Centres for Employable Skills (ICCES), of which there were 46 as of May 1991.

1.12 The Institute of Adult Education (IAE)

The Institute of Adult Education was started in April 1948 to provide extra-mural teaching to the public. It provided the classical British type tutorial classes in which the aim was not to study for examinations but to extend one's horizon by learning for its own sake.

By 1962, demands for certificate courses had grown so much that the Government required the Institute to start workers' colleges and evening classes that provided tuition towards the G.C.E. and University of Ghana degrees. It continues to provide these services and has over 30 centres all over Ghana. The largest centre is Accra with 3,117 students in 1990/91, of whom 86 were pursuing part-time degree courses.

The Institute also runs a mature student scheme through which adults aged 30 years and over are admitted to read degree courses after passing a strenuous examination. About 1,000 people take the examination each year, and between 50 and 70 of them are admitted for the degree programme.

The University of Cape Coast runs a similar programme. About 2,000 people, mostly practising teachers, took the Mature Students' Examination in March 1992, but not more than 50 would eventually be admitted in October 1992 to take degree courses.

1.13 Distance Education

Distance education is not new in Ghana, but it is now less extensive than it was some two to three decades ago when, in addition to workers, a large number of students in training colleges and practising teachers obtained tuition in order to earn salary increments and to improve their academic qualifications.

Two major factors accounted for the decrease in the use of distance education in Ghana:

- The stoppage of payment of allowances to teacher trainees. The ambitious ones among them used part of their allowances for correspondence courses. When the allowances were stopped, it became impossible for students to pay for the courses. It should be noted that most of such student teachers were from poor homes that could not sponsor their children at secondary schools. Since allowances were paid at teacher training colleges, some of these young ones used the teacher training colleges as stepping stones for

further educational advancement. It was therefore a big blow to such students when payment of allowances was stopped in 1968.

- The downward trend of the economy a few years after independence meant that most people found it difficult to pay for correspondence courses from abroad.

  The courses became more expensive in terms of income levels in Ghana. For example, in 1988 an "O" Level Maths course cost £145, which was three times a middle income earner's monthy salary in Ghana. Foreign exchange controls were also imposed by the government. Prior to this, many hundreds of Ghanaians had been able to acquire both academic and professional qualifications in such fields as the "O" and "A" levels, law, accountancy, management and secretaryship from such British distance education institutions as Wolsey Hall, Rapid Results College, Mayflower College and the U.S.-based International Correspondence School.

It was as a result of the difficulties enumerated above that the Institute of Adult Education of the University of Ghana decided to launch its own correspondence course programme in November 1970 (Ansere, 1982). Initially, the courses were "wrapped around" textbooks, but it soon became apparent that foreign exchange problems were also affecting the importation of textbooks. As a result, comprehensive courses or self-contained courses that needed no textbooks were developed. At its peak in 1976, the Correspondence Unit of the Institute of Adult Education had registered 5,938 students.

Difficulties soon set in again even with the comprehensive courses. For example, the harsh economic conditions of the period affected the development and production of course materials; printing materials became scarce and expensive at a time government subvention was reduced and did not come regularly.

The unit was also understaffed and had to rely on the assistance of other members of staff from outside. These people were not paid for the extra work so they were reluctant to offer their services. As a result of these and other difficulties, the work of the unit and student numbers gradually declined. In 1984, only 12 new students registered. Efforts are now being made to revive the work of the unit; courses in five subjects are currently being developed.

1.14 Other Distance Education Initiatives

1.14.1 Kumasi Institute of Tropical Agriculture (KITA)

This is a bold attempt to help young people who are interested in acquiring qualifications in agriculture but cannot enter government Agricultural Colleges. The institution offers both face-to-face and distance education courses. The following are the subjects offered, but a student can choose only one option at a time: livestock, poultry, vegetable production and farm management.

The last three months of the three-year programme have to be spent at the College for practical aspects of the course.

The students are prepared for the National Vocational Training Institute's Grade I Certificate examination. There were only 8 students registered in the programme in 1992, and they paid ¢4,000 per course.

Some of the problems enumerated by KITA include the inefficient postal system, lack of printing equipment and difficulty with getting some of the students to become familiar with some equipment, such as a water trough. TV cassettes would be of help, but these are beyond the means of the institution.

1.14.2 Home Study Centre

This centre took over from the British School of Careers, which had been sold out in Britain. It was incorporated in Ghana in 1976 and runs a number of correspondence courses.

The Executive Director complained that when he advertised last year, he had over 1,000 enquiries but only 8 people registered, mainly because of the fees, which go as high as ¢158,000 (over $400) for the B.Sc. (Economics) programme. He thinks distance education is necessary for the country, but economic difficulties make it difficult for large patronage. As economic conditions improve, more students will be attracted to distance education courses and programmes.

1.14.3 The Rapid Results College

This was one of the popular commerical correspondence colleges in the past. It is no longer very active in Ghana.

1.14.4 Ghana Institute of Journalism

The Director informed us that demand for their courses is so high that they have started writing courses in journalism to be offered at a distance. They have also contacted the Post and Telecommunications Corporation for a rebate on the postage of the course materials. As to how soon they will start, the Director would not mention any date apart from saying "pretty soon."

1.14.5 International Correspondence School

The survey team could not obtain or access any information about the school and its programmes.

1.14.6 Bible Correspondence Schools

Many bible correspondence schools are run from both inside and outside Ghana, particularly for young adults. These schools do not have formal programmes.

1.14.7 Media Houses

The Ghana Broadcasting Corporation, the *People's Daily Graphic*, the *Ghanaian Times*, the *Mirror* and the *Weekly Spectator* are some of the media houses that provide nonformal and incidental education through broadcasts, plays, news items, feature articles and the like. Their aim is not only to inform but also to educate the general public on topical issues. Of particular interest are the Obra and Osofo Dadzie plays and TV theatre.

1.14.8 The Trades Union Congress (TUC)

The team was informed that the TUC offered a distance education programme in Trade Union Studies before 1981. The course was supported by the International Labour Organisation (ILO).

The TUC still wishes to run distance education courses for its members in such areas as general education, economics, company law, co-operative education, accounting and management. Employees want what they study to be relevant to their jobs. The Government, the ILO and the TUC will be all willing to support a programme aimed at improving the quality and performance of labour. There are plans to launch a Workers' Education Endowment Fund, part of which will be used to support distance education programmes for workers.

1.14.9 Pupil Teachers' Modular Course

During the late 1970s and early 1980s, Ghana lost many of its trained teachers to Nigeria where the economic opportunities were relatively better. Untrained teachers, popularly called "pupil teachers," were employed to fill the gap. In 1981/82 untrained teachers made up 48.7 per cent of teachers in primary schools, 32.1 per cent in middle schools and 26 per cent in secondary schools (Ghana Statistical Service, 1991).

To improve the situation and help the untrained teachers acquire teaching certificates, the Ghana Education Service started a modular course that used distance education materials to prepare them while at their posts. The course covered the first 2 years' syllabus of the 4-year teacher training programme and then the trainees entered the third year in Teacher Training Colleges. In all 15,701 pupil teachers were involved between 1983/84 and 1987/88, 12,561 entered Training Colleges, and 7,537 passed the final Teachers' Certificate "A" exams.

1.14.10 Ministry of Health

Officials at the headquarters of the Ministry of Health claimed they once ran a distance education programme but had to discontinue when funds ran out.

The Ghana Nurses and Midwives Council supports such a programme at the post-basic nursing level. They suggested that if such a programme should be run, specific hospitals, doctors and sisters could be identified to reduce the "loneliness" inherent in distance education.

1.14.11 Kumasi Advanced Technical Teacher's College (KATTC)

This institution provides training at the diploma level for teachers of technical and vocational subjects. Because it cannot satisfy the demands for its courses, it has started to provide modular courses. The courses combine distance education materials and face-to-face instruction during vacation. The response has been very encouraging, and the Assistant Director (Academic) hinted that the distance education element is going to be expanded in the very near future.

2.0 Summary of Constraints in the Education System

There are basic constraints in the education system in Ghana. These are financial, human resource and public will. The Ministry of Education Brief to the PNDC in May 1991 summarised the constraints. Some of these are:

2.1 Basic Education

- Inadequate teaching staff of the right calibre.
- Inadequacy of infrastructure, especially in remote areas.
- Previously high drop-out rate, which has started to decrease.

2.2 Secondary/Technical Schools

- Inadequate infrastructure.
- Inadequate qualified teachers, especially in vocational, technical and science subjects.
- High unit costs.
- Absence of reliable projections of skilled and middle-level manpower needs of the country.

2.3 Tertiary Education

- Lack of access because of insufficient space.
- High unit costs.
- Absence of projections for middle- and high-level manpower.
- Inadequate infrastructure, staffing, equipment and accommodation for both students and lecturers.

2.4 Nonformal Education

- Inadequate infrastructure.
- Inadequacy of learning materials.
- Lack of effective co-ordination between various agencies in the field.
- Inability to maintain motivated voluntary literacy facilitators and instructors.

Distance education is one effective and cost-efficient means by which some of these contraints in education can be overcome.

C. DISTANCE EDUCATION SYSTEM DESIGN

1.0 Current Distance Education Needs in Ghana

In a survey conducted throughout Ghana between December 1991 and March 1992, the following distance education needs were identified.

1.1 Secondary Level

There are a large number of adult middle school leavers who are engaged in various jobs and want to improve their education to the G.C.E. "O" Level standard. They want to do so because for some years now the "O" Level qualification has become the basic qualification required by many employers. Those who have other equivalent qualifications, such as the Certificate "A" (4-year), the Royal Society of Arts (RSA) Stage II and the City and Guilds Certificate, are even required to take the G.C.E. "O" Level since it is accepted as the universal measure of educational qualifications in Ghana.

However, there are already certain agencies in the country for providing that type of qualification. Examples are the evening classes run by the Workers' Colleges as well as classes offered by private individuals and organisations.

An "O" Level course through distance education is being run by the Institute of Adult Education. The programme needs to be improved in terms of staff and equipment; its course offerings also need to be increased.

It is also not too difficult to study independently for the "O" Level since there are quite a number of textbooks and qualified people accessible who can help the independent student. This point applies in a large measure to those in search of the "A" Level qualification as well. Teachers in higher institutions and some workers in various communities are among people who can provide such assistance.

1.2 Nonformal Education

Everybody engaged in the productive process needs some continuing education relevant to their field. Most people in Ghana are engaged in agriculture, and during the survey some suggestions were made about running nonformal education through distance methods for farmers and the general public in such areas as crop and arable farming, civics, family life education, primary health care, basic law and economics.

Such programmes will go a long way not only to provide the general public with relevant information and a useful body of knowledge but also to provide all types of adult educators, extension and community workers with supportive information and resource material for their work.

In fact, such a distance education programme is being operated in many francophone African countries. The Institute of Adult Education has plans to introduce a similar programme, and it even has a few booklets in preparation.

The Nonformal Education Division of the Ministry of Education is currently running a national functional literacy programme. The aims of the programme are to provide learning opportunities for the out-of-school adult population. If the programme is expanded, it will serve some of the nonformal learning needs mentioned above.

1.3 Technical and Vocational Skills

Ghana needs to produce additional manpower in this area. There is, however, a widespread view that such skills cannot be taught at a distance. In the survey on distance education needs in Ghana, the team met several people who had studied such subjects at a distance. There was an old man in Cape Coast who had studied printing through a correspondence course offered from England; he did his practicum at the Government Printing Press in Accra where he was helped by experienced printers.

Another man studied tailoring through the same method and now teaches the subject at the National Women's Training Institute at Madina near Accra.

The Advanced Technical Teachers College at Kumasi is developing a distance education programme for technical and vocational subjects. Ghana can increase its output of middle-level and semi-professional personnel through a system in which polytechnics offer some of their technical and vocational courses through distance education.

1.4 Tertiary Education

Access to education is difficult at this level. Basic and secondary school facilities are much more widespread than tertiary education. Demand far outstrips available places, and there is a lot of pressure from those with the relevant qualifications for such courses. This is clearly borne out by the statistics from the three universities in Ghana (see Tables 2, 3 and 4).

It hardly needs to be emphasised that little can be achieved by way of development "without a critical mass of highly trained persons capable of analysing problems, devising solutions to these problems and managing the workings of the nation in all spheres" (Ministry of Education, Higher Education Division Draft Document, March 1991).

Ghana is passing through a phase in its development where it needs a great number of post-secondary trained personnel. The document referred to above indicates that, on the average, 150,000 professional and semi-professional personnel will be required between 1992 and 1995. The trend is likely to continue for the next few years. Areas that need such manpower are health, agriculture, education, management and accounting as well as mining, science and technology.

Output of such personnel, however, falls far below the requirements. For example, only 7,129 people graduated from the country's universities between 1985 and 1990, and only 1,200 graduated in the field of education. The requirements for secondary school teachers are as follows:

Table 5: National Secondary School Teacher Staff Requirements

Year	# Required	Year	# Required
1992/93	2,061	1996/1997	1,844
1993/94	629	1997/1998	2,604
1994/95	852	1998/1999	2,304
1995/96	2,666	1999/2000	2,503

Source: Ministry of Education, March 1991.

The table below shows the manpower requirements of other major categories of professional and semi-professional personnel from 1992–1995.

Table 6: Professional and Semi-Professional Personnel Requirements, 1992-1995

Field	1992	1993	1994	1995
Social Scientists	180	218	233	262
Maths/Stats	40	48	51	50
Law	2,062	2,495	2,662	2,000
Admin/Management	3,456	4,182	4,462	4,872
Medical Technicians	2,778	3,361	3,586	3,920
Bio/Agric Technicians	2,994	3,623	3,865	4,220
Social & Related Workers	25,008	30,260	32,260	35,300

Source: Second Report on Social Demand for Education and Manpower Requirements for Economic Development of Ghana, Ministry of Education, 1989, page 23.

The figures above indicate that Ghana cannot meet its manpower demands through conventional, on-campus face-to-face classes. Pressure on all facilities has been demonstrated over and over again in recent years, especially the inadequate residential facilities that exist in tertiary institutions. A recourse to distance education methods will go a long way to increase access to education and also offers several other advantages. In fact, the Academic Planning Committee (APC) of the University of Ghana discussed the idea as far back as 1986; its Sub-Committee recommended the use of distance education (see APC 1(1) 86-87).

2.0 Advantages of Distance Education

Distance Education has five major strengths. They are:

- Its capacity for sharing and therefore making more efficient use of scarce existing resources and personnel.
- Its capacity to reach people in isolated areas and to increase access to education and training for disadvantaged groups or those underserved, thus democratising educational provision.
- Its ability to achieve significant economies of scale if operated for reasonably large numbers. In such circumstances it can offer educational opportunities at a lower cost per student and produce graduates at a lower cost than is achieved in conventional education.

- Its ability to spread new ideas quickly and widely. It can therefore be used to meet specific demands for manpower training or to update and improve the skills of the work force.

- Its flexibility in enabling adults to learn in their own time and place while they continue to earn and thus contribute to social and economic development.

2.1 Disadvantages of Distance Education

There are several inherent constraints and disadvantages in using distance education. These are:

- Distance education for small numbers, though sometimes justified for other reasons, is likely to be more expensive than conventional education.

- Distance education demands strong personal motivation and self-discipline. It is therefore more appropriate for adults than for children or adolescents.

- By its nature, distance education carries dangers of isolationism and depersonalisation. Because of reduced opportunities for dialogue in much of distance education, the students may develop an exaggerated dependence on printed authorities if they have been forced to rely heavily on their texts.

- There may be high drop-out rates in distance education.

However, these constraints could be reduced or overcome through careful guidance and counselling to distance learners, monitoring and assessing the learner's progress, providing efficient student support services and using other appropriate media besides print.

3.0 Relevant Courses

Demand alone is not always the best indicator of which courses to provide; available resources and environmental considerations are some of the other factors that need to be taken into account in deciding on what courses to offer.

In the Ghanaian situation the following courses can be provided with little difficulty:

- Education.

- Accounting and Management.
- Social Sciences.
- Communication Studies, including English.

With careful planning, agricultural science, agricultural extension and nursing courses can be introduced later. Pure sciences are not impossible to teach at a distance, but they need to be carefully introduced.

The possibility of offering technical and vocational courses should also be explored as part of the overall distance education programming for Ghana; initial distance education experience and systems development are essential.

4.0 Target Clientele

There are a large number of people who can be targeted and served by distance education at the tertiary level. This target population includes:

- Diploma holders and specialist teachers in basic and secondary schools.
- "A" Level holders who cannot or would not like to leave their jobs or homes for residential institutions.
- "A" Level holders who cannot gain admission into the country's universities because of insufficient facilities (see Tables 2, 3 and 4).
- Mature adults and others capable of pursuing university-level courses who have not had the opportunity to do so.
- Those who already have degrees but would like to study subjects other than those in which they had graduated.

5.0 Course Development

Courses normally should be developed by faculty members of the country's universities, and course ownership should reside with the academic faculties. Course teams should be used in the development of courses. Course authors should be contracted to produce the courses within a specified time, and they should supervise the tutors once the courses are offered.

Courses should be self-contained since it will be difficult to acquire books to "wrap" courses around.

6.0 Course Content

Inherent problems of credibility and acceptability of distance education courses and programmes can be overcome by making them an integral part of existing course offerings. Courses should, therefore, be based on the syllabuses run by existing universities. For example, education courses should be based on the syllabuses run by the University of Cape Coast. Accounting, management and communication courses should be based on the University of Ghana's syllabuses. No distinction will be made in the type of degree acquired since both on-campus and distance education students will take the same examinations.

The course credit system should be articulated with courses offered at other tertiary institutions, such as diploma-awarding institutions. This system will save time and money since students will not have to repeat courses already taken at another institution in order to complete a degree programme.

7.0 Organisation

A Distance Education Unit should co-ordinate the design and production of distance learning materials, working largely through an effective, cost-efficient outreach network of existing universities, colleges, polytechnics and senior secondary schools for their resources and facilities. It will have a small core of key staff to co-ordinate the main distance education services: namely, design, editing, development, production, management and training. However, the writing and tutoring activities will be the responsibility of the selected institutions and their staff.

It is proposed that a "course team approach" be adopted in the development of distance teaching materials. A course team would typically include subject content specialists, course co-ordinator or editor, graphic designer and media producer. The composition may vary from one course to another.

One of the early activities of the Unit will be to organise and conduct a series of training workshops for all staff, both full- and part-time, in the skills of writing, editing, delivery, tutoring and evaluating distance education courses.

An efficient records keeping system will need to be established at the outset.

7.1 Delivery Systems

The Unit will use a wide range of printed materials and other appropriate media to ensure that learning opportunities are widely accessible and that learners have the support they require to complete their courses successfully. The teaching methods will include:

- Specially packaged course materials that include study guides, workbooks, assignments and review exercises.
- Study groups to be organised at regional and district levels.
- Face-to-face interaction with tutors at convenient study centres or resource centres.
- Constructive and timely feedback on written and practical assignments.

In addition, instructional technology will be used, whenever appropriate, to deliver course content or supplement written materials. It may include combinations of:

- radio broadcasts,
- audio cassettes,
- video cassettes,
- audio teleconferences and
- computer software for those with access to computers in resource centres, universities, colleges and schools.

A Student Handbook will be produced to explain how the students should make effective use of the teaching materials and media. It will be necessary to organise and conduct a series of training workshops for all staff to be involved in providing student support services. A Tutor's Handbook would also need to be produced before the launching of the distance education programme.

8.0 Student Support Services

The Unit will co-ordinate the various outreach and other support services required by the learners at convenient locations throughout

the country. These services will include dissemination of information and promotion of new courses and distribution of course materials and essential books and equipment.

As far as possible the Unit will make use of existing staff and facilities to provide learner support services in decentralised locations. The learner support services will include the following:

- Organised study groups that meet regularly.
- Timely and constructive feedback on assignments.
- Access to sufficient supplementary facilities, such as libraries, audio and video cassettes, photocopy machines and so forth.
- Guidance and counselling.
- Problem solving on administrative and practical arrangements.

9.0 Human Resources Needed

For a distance education programme to run effectively, it requires well prepared and trained human resources.

9.1 Academic Personnel

There are a number of key academic staff who are necessary for an efficient distance education organisation. The job descriptions would include the following positions.

9.1.1 Programme Director

A chief academic and administrative head of the Unit should be appointed. He/she will be responsible for ensuring the efficient administration and management of the Unit by providing guidance on:

- Policy.
- Financial control.
- Academic programmes.
- Personnel management and control.
- Interpreting and implementing policy.

The programme director will also co-ordinate the work of the Unit and will liaise and collaborate with relevant government ministries, departments, directorates and boards as well as with universities, colleges and tertiary institutions, NGOs and the private sector. There are a number of other general responsibilities as well:

- Recruiting, interviewing and evaluating staff.
- Initiating training for staff.
- Preparating and presenting budgets.
- Analysing costs and budgets for future planning and development.
- Reporting on progress of programmes.

9.1.2 Programme Manager

The duties and responsibilities of this position include:

- Acting as chief regional co-ordinator.
- Supervising and monitoring teaching/learning activities at the regional and district centres.
- Advising on human, material and financial resource requirements for distance education programmes.
- Planning, co-ordinating and monitoring staff training workshops in the region.
- Co-ordinating student support services in the region.
- Planning and co-ordinating programme evaluation activities in the region and providing feedback to the Unit headquarters.
- Liaising with activities in the other regions and at the Unit headquarters.

9.1.3 Educational Technologist

The duties and responsibilities of this position include:

- Planning and designing course materials through course teams.
- Planning and producing audio and video materials.

- Liaising with course writers and media production facilities and staff.
- Planning and conducting staff training workshops.
- Assisting and supervising media producers and technicians.
- Evaluating the effectiveness of course materials and the delivery system in use.
- Revising and modifying course materials and media in response to evaluation exercises.
- Advising on feasibility and application of other educational media and technologies.

9.1.4 Editor

The duties and responsibilities of this position are:

- Planning and designing course materials through course teams.
- Copy editing and language editing of course materials and scripts.
- Liaising with content specialists on effective course design and presentation.
- Liaising with graphic artists and media producers.
- Planning and conducting staff training workshops for part-time editors and proof-readers.

9.2 Administrative Personnel

There are a number of key administrative personnel requirements for an efficient distance education unit. The job descriptions would include the following.

9.2.1 Production Manager

The duties and responsibilities of the position are:

- Co-ordinating course material production, storage and delivery.
- Maintenance of records for course materials production and distribution.

- Planning, costing and managing course materials production and inventories.
- Supervising production and distribution of staff.
- Planning and conducting staff training programmes.
- Maintenance of records for materials, machines and equipment.

9.2.2 Financial Manager

The job responsibilities and duties include:

- Assisting the programme director on financial policy, control, management and forecasting.
- Maintaining financial records.
- Controling expenditure and income for the Unit.
- Preparing and presenting budgets according to agreed procedures.
- Establishing and maintaining sound financial systems for fees collection, staff payments, purchases and payments for services and supplies.
- Liaising with government and private organisations.
- Advising on management of the Unit along sound business lines.

9.3 Contract Staff

There are a number of contract staff who are critical for a successful distance education operation. Their job descriptions are given below.

9.3.1 Course Writers

- Writing new course materials.
- Adapting and supplementing existing materials.
- Liaising with course editors, artists, educational technologists and other members of the course teams.
- Revising course materials.
- Marking course assignments.

- Tutoring.
- Participating in tutorials, seminars and workshops.

9.3.2 Script Writers

- Writing scripts for radio broadcast and audio cassettes.
- Adapting and supplementing existing audio materials.
- Liaising with course writers, editors, producers and technicians.
- Selecting and revising audio programmes.
- Participating in seminars and workshops.

9.3.3 Tutor-Markers

- Marking assignments.
- Keeping student records.
- Writing reports.
- Liaising with course writers and subject co-ordinators.
- Maintaining correspondence with students.
- Providing guidance, counselling and tutoring.
- Participating in tutorials, seminars and workshops.
- Providing support materials.

9.3.4 Tutors

- Liaising with regional and district co-ordinators.
- Liaising with course and subject co-ordinators.
- Identifying and setting up local study groups.
- Facilitating learning and leading discussions.
- Encouraging and motivating learners.
- Providing guidance, counselling and tutoring.

- Keeping student records.
- Writing reports.
- Providing other support services to students.

9.4 Other Support Staff

There are a number of supporting staff members, such as secretaries, clerks, printers, drivers and watchmen. Their terms and conditions of service should be the same as those at the universities.

9.5 Terms and Conditions of Service

All staff of the Distance Education Unit should be appointed under the same terms and conditions of service accorded to other equivalent university positions.

10.0 Capital Resource Requirements

Certain basic capital resources are required to establish and administer a quality distance education programme. These include the following:

10.1 Accommodation

Accommodation will be required for the following:

- Office space.
- Course production, development and delivery space.
- Warehouses in Accra and in the regions to stock printed materials.
- Class rooms and study centres.

10.2 Equipment

- Capital equipment like printing machines, microcomputers, scanners, desktop publishing equipment, cameras and cutters will be required.
- Computer software and other supplies will also be required for the machines. The major ones are paper, films, plates and printing ink.
- Audio cassette dubbing, telex and fax machines.

10.3 Vehicles

Two 4x4 vehicles will be needed to contact course writers and visit centres.

In addition to using the Post Office, the State Transport Corporation, the City Express and the Ghana Private Road Transport Union to convey course materials in bulk to regional centres for delivery to students, the programme also needs one heavy-duty truck for the same purpose.

11.0 Funding

There is sufficient evidence through words and actions—or rather, lack of action—to show that the Government of Ghana cannot implement a desirable programme all by itself at the moment. Therefore, it is necessary to prepare a detailed budget for the programme and promote it to various agencies and individuals throughout the world. The Government of Ghana should be prepared to bear part of the cost and look inwards for local financiers. Some agencies that may be of help are listed below:

11.1 Internal Agencies

- The Valco Trust Fund.
- Social Security and National Insurance Trust (SSNIT).
- User agencies like business houses, Ghana National Association of Teachers and the Ministries. These bodies can operate a loan scheme to finance the distance education programme for their staff members.

11.2 External Agencies and International Co-operation

There are several areas in which international co-operation and assistance may be sought to complement national efforts in establishing the Distance Education Unit. They include:

- Training in skills and management of distance education.
- Acquisition, development and modification of course materials.
- Acquisition and sharing of information and data relating to distance education.

- Capital funding for physical facilities and equipment.
- Consultancy and technical support of various kinds, both short and long term.

The external agencies and international organisations that could be approached include the following:

- Foreign Governments, such as those of Britain, Germany, Australia, Japan and the Scandinavian countries, where distance education is widely used and understood, can provide some assistance.
- The IMF and the World Bank.
- The Commonwealth of Learning.
- CIDA.
- USAID.

At the regional and sub-regional levels, there are several areas of co-operation that are likely to benefit the current Ghanaian initiatives in distance education. These include the sharing of course materials, participation in common training workshops and the exchange of information, experiences and expertise in distance education. Examples include West African Distance Education Association (WADEA), Distance Education Association of Southern Africa (DEASA) and Zambian Association of Distance Education (ZADE).

UNESCO has recently launched a new project entitled "Priority Africa" that aims to produce information and training packages on various aspects of distance education. The International Council for Distance Education (ICDE) is also involved in the project. These packages would be useful for orientation and training of staff for the Distance Education Unit. Ghana should participate fully in these regional and sub-regional activities in distance education and derive maximum benefit from them.

D. PROGRAMME DEVELOPMENT AND OPERATONAL COSTS

1.0 Financial Management

The Distance Education Unit should be adequately and directly funded by government. It should be accorded financial autonomy to raise its own funds from donors and other sources and from services that it provides to client groups. The management and administration of all programme development and operational costs should be the responsibility of the Programme Director of the Unit.

2.0 Course Development Costs

The course development costs have been calculated on the assumption that a B.Ed. and B.Sc. (Admin) programme through distance education will be started in the first year at the University of Cape Coast and the University of Ghana respectively. There will be incremental growth in programme and course development and student numbers in subsequent years (see projections in Table 7).

Table 7: Enrolment in Various Distance Education Programmes

Programmes	Year 1	Year 2	Year 3	Year 4	Year 5
B.Ed.	200	400	600	800	1,000
B.Sc. (Admin.)	200	200	400	600	800
B.Ed. (Science)	–	–	–	200	400
Business Studies and Other Courses	–	–	1,200	2,400	3,600
SSS Maths/English	–	–	–	1,000	2,000
Total	400	600	2,200	5,000	7,800
Fees expected from university students (at $200 per year)	80,000	120,000	200,000	320,000	440,000
Fees from other Courses (at $150 per year)	–	–	180,000	510,000	840,000
Total	80,000	120,000	380,000	830,000	1,280,000
Number of University Courses	40	80	150	210	270
Number of Other Courses	–	–	20	80	140

3.0 Staffing

The staffing details required for establishing a Distance Education Unit are described in Section C: Distance Education System Design. The summary regarding the number of staff and costs is provided in Table 8.

Table 8: Recurrent Cost of Staffing

Cost of Staffing	Year 1	Year 2	Year 3	Year 4	Year 5	Total (US $)
Instruction						
Academic Course Supervisor	25,000	37,500	50,000	50,000	62,500	225,000
Tutor/Marker	75,000	112,500	150,000	150,000	187,500	675,000
sub total	100,000	150,000	200,000	200,000	250,000	900,000
Professional*	50,000	132,000	145,200	159,720	175,692	662,612
sub total	50,000	132,000	145,200	159,720	175,692	662,612
Technical (5x4500)	22,500	24,750	27,225	29,947	32,942	137,364
sub total	22,500	24,750	27,225	29,947	32,942	137,364
Support (5x4500)	22,500	24,750	27,225	29,947	2,942	137,364
(10x3500)	35,000	38,500	42,350	46,585	51,244	213,679
sub total	57,500	63,250	69,575	76,532	84,186	351,043
Overhead 15%	34,500	55,500	66,300	69,930	81,423	307,653
Total Salaries	264,500	425,500	508,300	536,129	624,243	2,358,672
Cost of Course Development						
Author Stipends (120 courses)	75,000	100,000	100,000	75,000	75,000	425,000
sub total	75,000	100,000	100,000	75,000	75,000	425,000
Total US $	339,500	525,500	608,300	611,129	699,243	2,783,672

* Year 1 – five professionals at $10,000 each; Years 2 through 5 five professionals at $10,000 each and ten at $7,000 each.

4.0 Non-Salary Recurrent Costs

All production should use internal staff, equipment and technical resources. Expenses are incurred through the purchase of paper, audio tapes, video tapes, maintenance agreements for computers, software, vehicle repairs, delivery costs, shipping, postage, telephone, copyright clearance and so forth. Main items of non-salary recurrent costs are indicated in Table 9.

Table 9: Non-Salary Recurrent Costs

Non-Salary Recurrent Items	Year 1 40 Courses	Year 2 80 Courses	Year 3 150 Courses	Year 4 210 Courses	Year 5 270 Courses	Total
Course Production	92,000	109,500	103,500	84,500	59,500	449,000
Telephone	5,000	5,000	6,000	8,000	10,000	34,000
Software	3,000	1,500	1,500	1,500	1,500	9,000
Postage & Printing	15,000	20,000	25,000	30,000	35,000	125,000
Maintenance Agreement	4,000	4,000	4,000	4,000	4,000	20,000
Rent for Warehousing	5,000	5,000	5,000	7,000	7,000	29,000
Vehicle Insurance	n/a					
Office Expenses	10,000	10,000	10,000	15,000	18,500	63,500
Travel	20,000	20,000	20,000	20,000	20,000	100,000
Training Workshops (5)	20,000	20,000	20,000	20,000	20,000	100,000
Furniture	10,000	5,000	5,000	5,000	5,000	30,000
	184,000	200,000	200,000	195,000	180,500	959,500

5.0 Capital Costs of Equipment

The main equipment items for course production and delivery, capital cost per unit, total cost and the expected life in years are indicated in Table 10.

Table 10: Equipment Capital Costs

Item	# of Units	Cost per Unit	Total Cost	Expected Life
Macintosh IIci, 21" monitor	2	8,000	16,000	10 years
Macintosh SE30	7	5,000	35,000	10 years
Laser printer	2	7,000	14,000	10 years
Scanner (Abaton)	2	2,500	5,000	10 years
Audio-tape dubbing	2	7,000	14,000	10 years
Audio-tape Slave	2	4,000	8,000	10 years
Photo-copying machine	2	24,000	48,000	10 years
Fax machine	12	1,500	18,000	10 years
Vehicles (4x4)	2	20,000*	40,000	12 years
Truck	1	25,000	25,000	12 years
Total US $		104,000	223,000	

* Cost of vehicle is $16,000 plus shipping.

6.0 Course Unit and Student Cost Analysis

As described in the Table 11 below, the unit cost per course and student will decrease with a rise in enrolment over the five year term. The cost is substantially lower than the current cost per student in conventional institutions; it is estimated to be approximately US $1,863 per full time residential university student.

Table 11: Course Unit and Student Cost Analysis

Item	Year 1	Year 2	Year 3	Year 4	Year 5
Total Cost	746,500	730,500	815,300	813,129	891,743
Number of Courses	40	80	150	210	270
Unit Cost per course	18,663	9,131	5,435	3,872	3,301
Number of Students	400	600	2,200	5,000	7,800
Unit Cost per Student	1,866	1,218	371	163	114
Fees Expected from University Students @ $200 p.a. and others @ $150 p.a.	80,000	120,000	380,000	830,000	1,280,000

7.0 Total Distance Education Programme Cost

The total distance education programme costs for a five-year period are approximately:

Table 12: Total Programme Costs

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Total US $
Instruction	100,000	150,000	200,000	200,000	250,000	900,000
Professional	50,000	132,000	145,200	159,720	175,692	662,612
Technical	22,500	24,750	27,225	29,947	32,942	137,364
Support	57,500	63,250	69,575	76,532	84,186	351,043
Overhead on Prof/ Tech/Support	34,500	55,500	66,300	69,930	81,423	307,653
Course Author Stipends	75,000	100,000	100,000	75,000	75,000	425,000
Non-Salary Recurrent Items	184,000	200,000	200,000	195,000	180,500	959,500
Capital Costs	223,000	5,000	7,000	7,000	12,000	254,000
Total US $	746,500	730,500	815,300	813,129	891,743	3,997,172

8.0 Unmet Demands

The Republic of Ghana has three significant sources of increasing demand for trained or retrained manpower: the educational reform programme; the new district administration system and the accompanying decentralisation of planning; and the Economic Recovery Programme. It is recognised that a substantial expansion of the higher education system will be required to ensure an adequate supply of trained manpower to run the country and the economy outside of education; to provide leadership in education; and to conduct scientific and other research to find solutions to problems of accelerated development and the use of new technology. A distance education integrated systems plan will have to take into account these challenges.

8.1 Options for Meeting the Demand

The challenges in education before the country are formidable. Courses in science and technology, accounting, bookkeeping, communication, small business management, public administration, diploma programmes for teachers, technical and vocational subjects, and so forth are needed to meet both short- and long-term national needs. No amount of linear expansion of the conventional educational system and its facilities will be enough to meet current and future needs; the financial resources may not be found to do that. The variable low costs of teaching and other student support services required for distance education programme delivery may be one solution to Ghana's development problems. As student numbers increase, distance education course and programme delivery will become increasingly cost effective.

APPENDIX A
LIST OF PEOPLE AND REPRESENTATIVES INTERVIEWED

Name	Organisation	Place
Mr. Y. Antumwini	P.N.D.C. Regional Secretary	Upper West
Wa Na	Paramount Chief	Wa
Mr. C. Kala	Ghana National Association of Teachers Regional Office	Wa
Mr. B. Batiir	Regional Directorate of Education	Wa
Mr. I.J. De Veer	Regional Lands Office	Wa
Dr. J. Otoo	Ministry of Health	Accra
Mr. John Atta-Quayson	Ghana Educational Service	Accra
Mr. S.Y. Manu	Ghana National Association of Teachers	Accra
Mr. L.K. Djokoto	Ministry of Agriculture	Ho
Togbe Adase, IV	Adase Enterprise	Ho
Prof. A.N. de Heer-Amissah	University of Cape Coast	Cape Coast
Dr. D.K. Fobih	University of Cape Coast	Cape Coast
Dr. (Mrs.) G. Ekuban	University of Cape Coast	Cape Coast
Mrs. R. Acheampong	Wesley Girls' High School	Cape Coast
Mrs. A. Koranteng	OLA Training College	Cape Coast
Mr. D. deGraft Aidoo	Legal Practitioner	Cape Coast
Mrs. E. Appiah-Amissah	National Council on Women and Development	Cape Coast
Mr. Hammond	Legal Practitioner	Cape Coast
Mr. F.N. Arko	Central Region Dev. Commission	Cape Coast
Mr. J.E. Afful	University of Cape Coast	Cape Coast
Mr. D.D. Aidoo (Snr.)	Mfantsiman Press	Cape Coast
Ms. Christine Brew	University of Cape Coast	Cape Coast
Mr. S.K. Buami	University of Cape Coast	Cape Coast
Mr. K. Konadu	University of Cape Coast	Cape Coast
Mr. R.T. Sackey	Prempeh College	Kumasi
Ms. Adomako	National Council on Women and Development	Kumasi
Mr. W.W. Gordon	Kumasi Advanced Technical Teachers College	Kumasi
Mr. Saint Gyima-Keese	University of Science and Technology	Kumasi
Prof. Kwame Sarpong	University of Science and Technology	Kumasi
Ms. Sophia Quarshie-Sam	University of Science and Technology	Kumasi
Mr. Thomas Boateng	Ghana Education Service	Kumasi
Mr. Ankrah	Sekondi-Takoradi Municipal Authority	Sekondi

Name	Organisation	Place
Major (Rtd) Hatse	Timber Industry	Takoradi
Mr. Yaw Adu-Gyimah	Ghana Police Service	Koforidua
Mr. C. Vandyck	New Juaben Municipal Authority	Koforidua
Mr. A.K. Gyimah	Civil Service	Koforidua
Ms. Seth Tweneboah	S.D.A. Training College	Koforidua
Mr. Nii Boi Tagoe	Ghana Broadcasting Corporation	Koforidua
Mr. Emml. Oduro	Ghana Broadcasting Corporation	Koforidua
Ms. Gladys Kpeli	Ghana Police Service	Koforidua
John Owusu-Ansah	Co-Operatives Department	Koforidua
Mrs. Ellen Adu-Saforo	Ghana Education Service	Koforidua
Mr. Emml. Barnor	State Insurance Corporation	Koforidua
Mr. S.A. Acquaisie	State Insurance Corporation	Koforidua
Mr. P.K. Nuamah	Labour Office	Koforidua
Mr. E.A. Adjei	Co-Operatives Department	Koforidua
Mr. C.C. Biney	Regional Valuer	Koforidua
Lt. Emml. Kotia	Ghana Armed Forces	Ho
Ms. V.A. Mantey	National Council on Women and Development	Ho
Ms. Peace Arku	Ministry of Health	Ho
Mr. Isaac Darah	Kabore Junior Secondary School	Ho
Mr. Kojo Yankah	Ghana Institute of Journalism	Accra
Mr. Amartey	Labour College	Accra
Mr. Mbeah	Trades Union Congress	Accra
Mr. A.K. Amedzro	Institute of Adult Education	Tamale
Mr. Alban Bokuma	Institute of Adult Education	Bolgatanga
Rev. J. Agalic	Institute of Adult Education	Bolgatanga
Mr. M.A. Pouzaa	Institute of Adult Education	W a
Dr. D. Oduro-Mensah	Institute of Adult Education	Sunyani
Dr. P.K. Fordjor	Institute of Adult Education	Tsito
Mr. E.D.K. Fiagbey	Institute of Adult Education	Ho
Mr. E.A. Aryee	Institute of Adult Education	Koforidua
Mr. K. Siabi-Mensah	Sekondi-Takoradi Workers' College	Takoradi
Naval Capt. Y. Mensah	Kumasi Metropolitan Authority	Kumasi
Mr. A.T. Konu	University of Ghana	Legon

APPENDIX B
QUESTIONNAIRES

SURVEY OF DISTANCE EDUCATION PROGRAMMES/NEEDS IN GHANA (INSTITUTIONS)

The Ministry of Education plans to establish Distance Education programmes in the country. This short instrument is intended to solicit your view on the issue.

1. Name of Institution: _____
2. Location: _____
3. What educational functions do you perform? _____

   _____

   _____

   _____
4. Do you offer any courses? Yes _____ No _____
5. What level(s) of courses do you offer? (Please circle the appropriate one.)

   Basic Secondary Tertiary
6. How do you select people for your programmes? _____

   _____

   _____

   _____
7. Are you able to satisfy all the demands on your institution for Education? Yes ____ No ____
8. Has your institution ever considered distance education as a means for improving access to your educational provisions? Yes ____ No ____
9. If yes, what have you done so far in that direction? _____

   _____

   _____

   _____

10. Do you really consider distance education as a viable alternative for your courses? Yes _____ No _____

11. If yes, what delivery modes do you think your institution can use?

    a. print

    b. radio

    c. TV

    d. combination of a, b, and c

    e. other

12. Do you have the personnel who can run a distance education programme effectively and efficiently? Yes _____ No _____

PERSONAL INSTRUMENT FOR ASSESSING DISTANCE EDUCATION NEEDS

The Ministry of Education plans to establish Distance Education programmes in the country. This short instrument is intended to solicit your views on the issue.

1. Respondent: _____
2. Sex: _____ Age: _____
3. Marital status: _____
4. Number of children: _____ Age range of children: _____
5. Highest educational institution attended: _____
6. The last two educational institutions attended:

   _____

   _____
7. Subjects studied at the last two institutions:

   _____

   _____
8. Present employment: _____
9. Current Rank: _____
10. Anticipated profession/occupation: _____
11. Level of certification/qualification needed: _____
12. Subjects needed: _____

    _____
13. If available, would you like to study by "distance education"?
    Yes ____ No ____
14. If yes, why are you interested in distance education? _____

    _____

    _____
15. What subjects/disciplines would you want to study? _____

    _____

    _____

16. How many hours can you study in a day? _____

17. If no (to question 13), why are you not interested in distance education?

_____

_____

18. How do you receive mail at your station? _____

_____

_____

19. How long do letters take to get to you from Accra? _____

20. Which medium of communication do you prefer?

    a. print

    b. radio

    c. TV

    d. audio cassette

    e. video cassette

21. Do you want any other suggested mode of communication? _____

_____

22. Would you prefer to study at home or at a central point (where available)?

    a. at home

    b. at a central point

    c. both a and b

    Explain why: _____

_____

_____

_____

23. At what level would you want to study? (circle one)

    a. Basic Education

    b. Secondary Education

    c. Tertiary Education

SURVEY OF DISTANCE EDUCATION PROGRAMMES/NEEDS IN GHANA (OPINION LEADERS/PARENTS)

The Ministry of Education plans to establish Distance Education programmes in the country. This short instrument is intended to solicit your views on the issue.

Questions 9–24 require that you circle the term that accurately describes your position. These are:

SA	=	Strongly Agree
A	=	Agree
IND	=	Indifferent
D	=	Disagree
SD	=	Strongly Disagree

Please circle only one of them in each case.

1. Respondent No. _____ (1b) Sex _____ 2. Age _____

3. Educational Qualification(s) _____

_____

4. Highest Institution Attended: _____

5. Profession: _____

6. Employer: _____

7. Position Held: _____ 8. Retired: Yes No

9. Distance Education (DE) is an acceptable mode of education.

SA A IND D SD

10. DE is totally unsuitable for our circumstances.

SA A IND D SD

11. Distance Education could be implemented immediately.

SA A IND D SD

12. This is because:

(a) _____

_____

(b) _____

_____

13. I will accept DE under certain conditions:

SA A IND D SD

14. The conditions are:

(a) _____

_____

(b) _____

_____

(c) _____

_____

15. DE could be implemented when conditions improve.

SA A IND D SD

16. Conditions that require improvement are:

(a) _____

_____

(b) _____

_____

(c) _____

_____

17. Certain subjects cannot be taught at all by DE.

SA A IND D SD

18. These subjects are:

(a) _____

_____

(b) _____

_____

(c) _____

_____

19. Certain professions cannot be taught easily by DE.

SA A IND D SD

20. These professions are:

(a) _____

(b) _____

(c) _____

21. DE can be used at all level of education.

SA A IND D SD

22. If not, at what levels is it not appropriate?

(a) _____ (b) _____

23. JSS students are too young for DE.

SA A IND D SD

24. JSS students who fail to enter SSS can be taught by DE.

SA A IND D SD

25. Do you know anybody who has studied by DE? Yes No

26. Are you willing to help in any way if DE programme is started?

Yes No

27. If a DE programme is to be run in Ghana what subjects/disciplines do you think should be covered?

(a) _____ (b) _____

(c) _____ (d) _____

APPENDIX C
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